SECTION 10A

ESTIMATED QUANTITIES

1.10A.1 PLANS

a) Estimated quantity tabulations shall be shown on plans. All appropriate contract "pay items" listed in Subsection 1.10A.3 shall be included.

(b) Each bridge plan detail sheet shall have the following type of tabulation which represents the quantity of contract pay items shown on that sheet:

QUANTITIES				
PAY ITEM NO.	STANDARD ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY

(c) The General Plan and Elevation sheet shall have the following type of tabulation which represents the total quantities of the individual plan sheets and, consequently, the total quantities for the bridge or structure.

SUMMARY OF QUANTITIES				
PAY ITEM NO.	STANDARD ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY

(d) Each bridge design unit shall obtain from the roadway design unit the last roadway pay item number to facilitate the bridge pay item numbering.

(e) Quantities on these sheets shall be listed on an individual bridge or structure basis. Retaining walls shall be summarized on a total quantity for all walls in the contract. However, the quantities for the individual walls shall be included in a separate tabulation.

(f) Overhead and Cantilever Sign Structures shall be listed on an individual lump sum basis, however, the items for clearing site, foundation excavation, concrete for footings, temporary sheeting and reinforcement steel shall be listed as the total summary for all sign support structures in the contract.

1.10A.2 CALCULATIONS

(a) Estimated quantity calculations are required as part of the Final Plan Submission. They shall be on 210 millimeter by 297 millimeter sheets bound in a separate folder (from the design calculations). Each sheet shall be initialed by the estimator and the checker.

(b) The required submission of bridge quantity calculation at the Final Plan shall also include schematic drawings of all concrete structures. (See Paragraph c).

(c) The volume of concrete in each individual unit shall be noted on the schematic drawings (paragraph b). The sheets shall be bound into the folder following the index. Pages 1.10A-3 to 1.10A-5 illustrate the concept desired. This will facilitate pinpointing any mistakes or errors during construction when Quantity calculations are made for purposes of monthly payments.

1.10A.3 LIST OF BRIDGE PAY ITEMS (1996 STANDARD SPECIFICATIONS)

The 1996 Standard Specifications for Road and Bridge Construction provide the following

Pay Items for work on bridges and structures.

SECTION	PAY ITEM	NOTES	PAY UNIT
201	CLEARING SITE, BRIDGE	(1)	LUMP SUM
	CLEARING SITE, STRUCTURE	(1)	LUMP SUM
	TEMPORARY SHIELDING		LUMP SUM
	BONDING AND GROUNDING	(22)	LUMP SUM
202	REMOVAL OF BITUMINOUS CONCRETE OVERLAY	(2)	SQUARE METER
203	POROUS FILL	(3)	CUBIC METER
204	BORROW EXCAVATION, ZONE	(3)	CUBIC METER
	BORROW EXCAVATION, BRIDGE FOUNDATION	(3)	CUBIC METER
205	CHANNEL EXCAVATION,	(3)	CUBIC METER
206	FOUNDATION EXCAVATION	(4)	CUBIC METER
	BRIDGE EXCAVATION	(4)	CUBIC METER
	COARSE AGGREGATE LAYER	(4)	CUBIC METER
	COFFERDAMS	(5)	LUMP SUM
404	BITUMINOUS CONCRETE SURFACE COURSE MIX	(6)	MEGAGRAM
405	BRIDGE APPROACH SLABS, ___ MM THICK	(3)	SQUARE METER

SECTION	PAY ITEM	NOTES	PAY UNIT
	BRIDGE APPROACH TRANSI-TION SLABS, __ MM AVERAGE THICKNESS	(3)	SQUARE METER

501	CONCRETE IN STRUCTURES, CULVERTS	(7)	CUBIC METER
	CONCRETE IN STRUCTURES, FOOTINGS	(7)	CUBIC METER
	CONCRETE IN STRUCTURES, RETAINING WALLS	(7)	CUBIC METER
	CONCRETE IN SUBSTRUCTURES, ABUTMENT WALLS	(7)	CUBIC
	CONCRETE IN SUBSTRUCTURES, PIER COLUMNS AND CAPS	(7)	CUBIC
	CONCRETE IN SUBSTRUCTURES, PIER SHAFTS	(7)	CUBIC
	CONCRETE IN, SUPERSTRUCTURE, DECK SLABS	(7)	CUBIC METER
	CONCRETE IN, SUPERSTRUCTURE, SIDEWALKS	(7)	CUBIC METER
	CONCRETE IN, SUPERSTRUCTURE, PARAPETS	(7)	LINEAR METER
	CONCRETE SEAL IN COFFERDAMS	(5)(7)	CUBIC METER
	REINFORCEMENT STEEL IN STRUCTURES	---	KILOGRAM
	REINFORCED STEEL IN STRUCTURES, EPOXY COATED	---	KILOGRAM
	REINFORCED STEEL IN STRUCTURES, GALVANIZED	---	KILOGRAM
	WATERPROOFING	---	SQUARE METER
	EPOXY WATERPROOFING SEAL COAT	---	SQUARE METER

SECTION	PAY ITEM	NOTES	PAY UNIT
	45 BY 45 MM PREFORMED ELASTOMERIC JOINT SEALER	---	LINEAR METER
	65 BY 65 MM PREFORMED	---	LINEAR METER

	ELASTOMERIC JOINT SEALER		
	100 BY 100 MM PREFORMED ELASTOMERIC JOINT SEALER	---	LINEAR METER
	150 BY 145 MM PREFORMED ELASTOMERIC JOINT SEALER	---	LINEAR METER
	100 BY 95 MM REINFORCED ELASTOMERIC EXPANSION DAM	---	LINEAR METER
	ROCK ANCHORS	---	LINEAR METER
	STRIP SEAL EXPANSION DAM	---	LINEAR METER
	SAWCUT GROOVED DECK SURFACE	---	SQUARE METER
	REINFORCED CONCRETE BOX CULVERT, PRECAST	---	LINEAR METER
	PRESSURE INJECTION, CONCRETE CRACKS	---	LINEAR METER
502	PRETENSIONED PRESTRESSED CONCRETE BEAMS, 1 125 MM	---	LINEAR METER
	PRETENSIONED PRESTRESSED CONCRETE BEAMS, 1 350 MM	---	LINEAR METER
	PRETENSIONED PRESTRESSED CONCRETE BEAMS, 1 575 MM	---	LINEAR METER
	PRETENSIONED PRESTRESSED CONCRETE BEAMS, 1 800 MM	---	LINEAR METER
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BI-900), 900 BY 675 MM	---	LINEAR METER
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BII-900), 900 BY 825 MM	---	LINEAR METER

SECTION	PAY ITEM	NOTES	PAY UNIT
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BIII-900), 900 BY 975 MM	---	LINEAR METER
	PRESTRESSED CONCRETE BOX	---	LINEAR METER

	BEAMS (TYPE BIV-900), 900 BY 1 050 MM		
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BI-1200), 1 200 BY 675 MM	---	LINEAR METER
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BII-1200), 1 200 BY 825 MM	---	LINEAR METER
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BIII-1200), 1 200 BY 975 MM	---	LINEAR METER
	PRESTRESSED CONCRETE BOX BEAMS (TYPE BIV-1200), 1 200 BY 1 050 MM	---	LINEAR METER
	PRESTRESSED CONCRETE SLAB BEAMS (TYPE SII-900), 9OO BY 375 MM	---	LINEAR
	PRESTRESSED CONCRETE SLAB BEAMS (TYPE SIII-900), 900 BY 450 MM	---	LINEAR METER
	PRESTRESSED CONCRETE SLAB BEAMS (TYPE SIV-900), 900 BY 525 MM	---	LINEAR
	PRESTRESSED CONCRETE SLAB BEAMS (TYPE SII-1200), 1 200 BY 375 MM	---	LINEAR
	PRESTRESSED CONCRETE SLAB BEAMS (TYPE SIII-1200), 1 2OO BY 450 MM	---	LINEAR
	PRESTRESSED CONCRETE SLAB BEAMS (TYPE SIV-1200), 1 200 BY 525 MM	---	LINEAR METER

SECTION	PAY ITEM	NOTES	PAY UNIT
503	STRUCTURAL STEEL	(8)	LUMP SUM
	STRUCTURAL STEEL	(8)	KILOGRAM
	STRUCTURAL STEEL BEARINGS FOR PRESTRESSED CONCRETE BEAMS	---	LUMP SUM

	STRUCTURAL STEEL DECK JOINTS	---	LUMP SUM
	STEEL GRID FLOORING	---	SQUARE METER
	FORMED STEEL FLOORING FOR PEDESTRIAN BRIDGES	---	SQUARE METER
	SHEAR CONNECTORS	---	UNIT
	SHEAR CONNECTORS, GALVANIZED	---	UNIT
504	TREATED TIMBER STRUCTURES	---	CUBIC METER
	TREATED TIMBER STRUCTURES, BRIDGE DECKING	---	CUBIC
	UNTREATED TIMBER STRUCTURES	---	CUBIC METER
	TREATED TIMBER STRUCTURES, WALES	---	CUBIC
	TREATED TIMBER STRUCTURES, SHEETING	---	CUBIC
505	PREBORED HOLES	(9)	LINEAR METER
	TEST PILES	---	LINEAR METER
	CAST-IN-PLACE CONCRETE PILES, __ MM DIAMETER	---	LINEAR METER
	PRECAST CONCRETE PILES, __ BY __ MM	---	LINEAR METER

SECTION	PAY ITEM	NOTES	PAY UNIT
	PRESTRESSED CONCRETE PILES	---	LINEAR METER
	STEEL H-PILES, HP __ MM BY ___ KG/M	---	LINEAR METER
	UNTREATED TIMBER PILES, __ MM DIAMETER	---	LINEAR METER

	TREATED TIMBER PILES, __ MM DIAMETER	---	LINEAR METER
	SPLICES FOR STEEL H - PILES	---	UNIT
	PILE LOAD TEST (STATIC)	(10)	UNIT
	PILE SHOES		UNIT
	PILE LOAD TEST (DYNAMIC)	(10)	UNIT
	FURNISHING EQUIPMENT FOR DRIVING PILES	---	LUMP SUM
506	CONCRETE SHEET PILING	---	SQUARE METER
	STEEL SHEET PILING	---	SQUARE METER
	TREATED TIMBER SHEET PILING	---	SQUARE METER
	TIE RODS	---	KILOGRAM
507	PNEUMATICALLY APPLIED MORTAR	(11)	SQUARE METER
508	CHAIN - LINK FENCE, ALUMINUM-COATED STEEL, BRIDGE _____ M HIGH	---	LINEAR METER
	CHAIN - LINK FENCE, PVC COATED STEEL, BRIDGE, _____ M HIGH	---	LINEAR METER
	CHAIN - LINK FENCE, BRIDGE, _____ M HIGH	---	LINEAR METER

SECTION	PAY ITEM	NOTES	PAY UNIT
	CHAIN - LINK FENCE, ALUMINUM COATED STEEL, BRIDGE, _____ M HIGH, CURVED TOP	---	LINEAR METER
	CHAIN - LINK FENCE, PVC COATED STEEL, BRIDGE, _____ M HIGH, CURVED TOP	---	LINEAR METER

	CHAIN - LINK FENCE, BRIDGE, _____ M HIGH, CURVED TOP	---	LINEAR METER
	METAL RAILING (__ RAIL, ALUMINUM)	---	LINEAR METER
	METAL RAILING (__ RAIL, STEEL)	---	LINEAR METER
	4 - BAR OPEN STEEL RAILING	---	LINEAR METER
509	CANTILEVER SIGN SUPPORT, STRUCTURE NO.	(12)	UNIT
	BRIDGE MOUNTED SIGN SUPPORT STRUCTURE NO. _____	(12)	UNIT
	BUTTERFLY SIGN SUPPORT, STRUCTURE NO. _____	(12)	UNIT
	OVERHEAD SIGN SUPPORT, STRUCTURE NO. _____	(12)	UNIT
510	ELECTRIC CONDUITS	(13)	LINEAR METER
	TELEPHONE CONDUITS	(13)	LINEAR METER
	____ MM GAS MAINS	---	LINEAR METER
	____ MM WATER MAINS	---	LINEAR METER
512	TEMPORARY STRUCTURE, ONE-WAY	(14)	LUMP SUM
	TEMPORARY STRUCTURE, TWO-WAY	(14)	LUMP SUM

SECTION	PAY ITEM	NOTES	PAY UNIT
512	TEMPORARY STRUCTURE, PEDESTRIAN BRIDGE	(14)	LUMP SUM
513	TEMPORARY SHEETING	(15)	SQUARE METER
	SHEETING LEFT IN PLACE	(23)	SQUARE METER
514	PAINTING BRIDGES -	---	MEGAGRAM

	EXISTING STEEL		
	PAINTING BRIDGES - EXISTING STEEL	---	LUMP SUM
	HAND/POWER TOOL CLEANING	(24)	SQUARE METER
	HAND/POWER TOOL CLEANING	---	LUMP SUM
	PAINTING AND NEAR - WHITE BLAST CLEANING - BEARINGS	---	UNIT
	PAINTING AND NEAR-WHITE BLAST CLEANING - MISCELLANEOUS APPURTENANCES	---	LUMP SUM
	CONTAINMENT PLAN	---	LUMP SUM
	WASTE DISPOSAL PLAN	---	LUMP SUM
	LEAD HEALTH AND SAFETY PLAN	---	LUMP SUM
	COMMERCIAL BLAST CLEANING	---	SQUARE METER
	NEAR-WHITE BLAST CLEANING	---	MEGAGRAM
	TESTING, IF AND WHERE DIRECTED	---	LUMP SUM
515	GRANITE MASONRY	---	SQUARE METER
516	CONCRETE CRIBBING	---	CUBIC METER
	BROKEN STONE FILL FOR CRIB WALL	---	CUBIC METER
SECTION	PAY ITEM	NOTES	PAY UNIT
517	INLET FRAMES AND GRATES	---	UNIT
	SCUPPERS	---	UNIT
	__ MM STEEL ALLOY PIPE	---	LINEAR METER
518	REPAIR OF CONCRETE DECK, TYPE _____	(1)	SQUARE METER
	MEMBRANE WATERPROOFING	---	SQUARE METER

	CONCRETE DECK OVERLAY PROTECTIVE SYSTEM, TYPE _____	---	CUBIC METER
	SCARIFICATION	---	SQUARE METER
521	RETAINING WALL, LOCATION NO. _____	---	SQUARE METER
522	NOISE BARRIER, ROADWAY	---	SQUARE METER
	NOISE BARRIER, BRIDGE	---	SQUARE METER
	NOISE BARRIER TEST POSTS AND PANELS	---	LUMP SUM
	NOISE BARRIER, FOUNDATIONS	---	UNIT
601	__ MM CORRUGATED STEEL UNDERDRAIN PIPE	---	LINEAR METER
605	___ MM BY __ MM WHITE CONCRETE BARRIER CURB, BRIDGE	---	LINEAR METER
	REINFORCEMENT STEEL	---	KILOGRAM
612	BEAM GUIDE RAIL, BRIDGE	---	LINEAR METER
	RUB RAIL	---	LINEAR METER
615	METAL RAILING	---	LINEAR METER

SECTION	PAY ITEM	NOTES	PAY UNIT	
616	CONCRETE SLOPE PROTECTION, ____ MM THICK		---	SQUAR
	CONCRETE SLOPE PROTECTION, REINFORCED, ____ MM THICK		---	SQUAR
701	__ MM RIGID METALLIC CONDUIT, TYPE _____	(18)	LINEAR METER	
	__ BY __ BY __ MM JUNCTION BOXES	(19)	UNIT	

	__ BY __ MM JUNCTION BOXES	(20)	UNIT
	__ MM JUNCTION BOXES	---	UNIT
	JUNCTION BOX FRAMES AND COVERS	---	UNIT
703	UNDERDECK LIGHTING ASSEMBLIES, TYPE _____	(21)	UNIT

(OTHER ITEMS)

511	__ MM STRUCTURAL PLATE PIPE , ___ THICK	---	LINEAR METER
	_ BY __ MM STRUCTURAL PLATE PIPE ARCH, __ THICK	---	LINEAR METER
	__ BY __ MM STRUCTURAL PLATE ARCH, __THICK	---	LINEAR METER
602	____ MM CORRUGATED STEEL CULVERT PIPE	---	LINEAR METER

NOTES:

(1) The first item is used when a "bridge" is involved, either partial or total removal.

The second item is used when a "structure" such as culverts, walls, etc. is involved, either partial or total removal. Also see Subsection 201.04 of the 1996 Standard Specifications and Section 17 of the NJDOT Procedures Manual for requirements that are to be shown on Plans. In addition, when it is determined that certain components are to be salvaged and remain the property of the State, provisions in the Plans and/or the Supplementary Specifications are required.

(2) This item is scheduled in bridge deck rehabilitation projects. See Subsection 1.9B.2 of this Manual.

(3) This item is listed with the roadway items of work.

(4) Payment line limits shall be shown on the Plans in accordance with Guide Sheet PLATES 3.16-1 to 3.16-5 of this Manual.

(5) See Section 35 of this Manual for guidance concerning Cofferdams and Sheeting Left in Place.

For major waterway bridges, separate Pay Items for COFFERDAMS and CONCRETE SEAL IN COFFERDAMS shall be scheduled at each pier (and abutment, if applicable) location.

(6) This item used with membrane waterproofing for resurfacing and bridge deck rehabilitation projects. See Section 9A and 9B of this manual.

(7) Concrete Classes and Pay Items shall be illustrated on Contract Plans.

(8) Use the lump sum method of payment. The per kilogram pay unit method should be considered for the occasional project where there is a possibility that significant changes can occur during construction, such as on repair or rehabilitation projects.

(9) See Subsection 1.36.3 of this Manual for guidelines as to when this item should be scheduled.

(10) Load tests scheduled on a project to project basis only if required in the Foundation Report.

(11) Usually scheduled under the square meter pay unit method. Per bag pay unit method should be considered for rehabilitation projects where there is the possibility of significant changes in extent of repair areas.

(12) See Subsection 1.32.8 d. of this Manual.

(13) The estimated quantity shall be the total length of all conduits in the bank.

(14) See Section 17 of the NJDOT Procedures Manual.

(15) See Subsection 1.35.2 of this manual.

(16) See Subsection 1.9B.2 of this manual for listing of other possible contract items (not included in the Standard Specifications) for bridge deck rehabilitation projects.

(17) The bridge items are listed (for <u>each</u> bridge and/or structure in the Contract) in the order in which the items of work appear in the 1996 Standard Item listing of the Contractor Payment Listing. Any additional bridge items which may be required (but which are not included in the provisions of the 1996 Standard Specifications) shall be included in the listing by the same criteria.

(18) See Standard Drawing PLATE 2.6-1 for details of RMC Expansion Sleeves.

(19) For use on barrier type bridge parapets. See Standard Drawing PLATE 2.6-2 for details.

(20) For use on bridge sidewalks. See Standard Drawing PLATE 2.6-1 and 2.6-2 for details.

(21) This item is listed with electrical items of work.

(22) Non-standard items shall be assigned a 5-digit number by the design unit. Item numbers shall start with the letter “N”.

(23) See Subsection 1.35.3 of this Manual.

(24) For those projects where Epoxy Mastic surface preparation with Hand/Power Tool Cleaning is warranted and the effective steel is confined to limited areas.